

Form PTO-1449 U.S. Department of Commerce
Patent and Trademark Office

November 21, 2000

Page 1 of 8

Atty. Docket No.

Serial No.

27987-228356

09/612,418

Applicant

RAYMOND P. JOHNSTON et al.

Filing Date

Group

July 7, 2000

1631

INFORMATION DISCLOSURE
STATEMENT BY APPLICANT

U.S. PATENT DOCUMENTS

Examiner Initial	Document Number	Date	Name	Class	Subclass	Filing Date If Appropriate
AM	3,715,192	2/6/1973	Wenz et al.			
	3,993,566	11/23/1976	Goldberg et al.			
	4,233,029	11/11/1980	Columbus			
	4,259,233	3/31/1981	Carrico et al.			
	4,271,119	6/2/1981	Columbus			
	4,277,966	7/14/1981	Rambauske			
	4,323,069	4/6/1982	Ahr et al.			
	4,413,407	11/8/1983	Columbus			
	4,579,555	4/1/1986	Russo			
	4,601,861	7/22/1986	Pricone et al.			
	4,639,748	1/27/1987	Drake et al.			
	4,668,558	5/26/1987	Barber			
	4,758,481	7/19/1988	Fauvel			

FOREIGN PATENT DOCUMENTS

Name	Document Number	Date	Country	Class	Subclass	Translation Yes/No

OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)

EXAMINER: Initial if citation considered, whether or not citation is in conformance with MPEP 609;
Draw line through citation if not in conformance and not considered. Include copy of this form with next
communication to applicant.



Form PTO-1449 U.S. Department of Commerce
Patent and Trademark Office

November 21, 2000

Page 2 of 8

Atty. Docket No.

Serial No.

27987-228356

09/612,418

Applicant

RAYMOND P. JOHNSTON et al.

Filing Date

Group

July 7, 2000

1631

INFORMATION DISCLOSURE
STATEMENT BY APPLICANT

U.S. PATENT DOCUMENTS

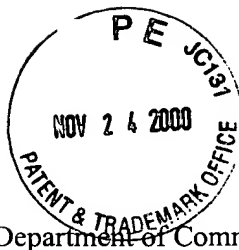
Examiner Initial	Document Number	Date	Name	Class	Subclass	Filing Date If Appropriate
AM	4,906,439	3/6/1990	Grenner			
	4,913,858	4/3/1990	Miekka et al.			
	4,950,549	8/21/1990	Rolando et al.			
	5,061,029	10/29/1991	Ishikawa			
	5,069,403	12/3/1991	Marentic et al.			
	5,078,925	1/7/1992	Rolando et al.			
	5,133,516	7/28/1992	Marentic et al.			
	5,136,678	8/4/1992	Yoshimura			
	5,158,557	10/27/1992	Noreen et al.			
	5,175,030	12/29/1992	Lu et al.			
	5,179,005	1/12/1993	Phillips et al.			
	5,200,248	4/6/1993	Thompson et al.			
	5,227,008	7/13/1993	Klun et al.			

FOREIGN PATENT DOCUMENTS

Name	Document Number	Date	Country	Class	Subclass	Translation Yes/No

OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)

EXAMINER: Initial if citation considered, whether or not citation is in conformance with MPEP 609;
Draw line through citation if not in conformance and not considered. Include copy of this form with next
communication to applicant.



Form PTO-1449 U.S. Department of Commerce
Patent and Trademark Office

INFORMATION DISCLOSURE
STATEMENT BY APPLICANT

November 21, 2000

Page 3 of 8

Atty. Docket No.

Serial No.

27987-228356

09/612,418

Applicant

RAYMOND P. JOHNSTON et al.

Filing Date

Group

July 7, 2000

1631

U.S. PATENT DOCUMENTS

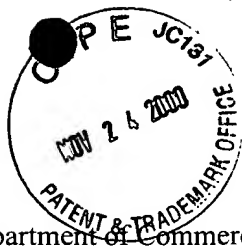
Examiner Initial	Document Number	Date	Name	Class	Subclass	Filing Date If Appropriate
AM	5,249,359	10/5/1993	Schubert et al.			
	5,265,184	11/23/1993	Lebby et al.			
	5,286,362	2/15/1994	Hoenes et al.			
	5,296,375	3/22/1994	Kricka et al.			
	5,304,487	4/19/1994	Wilding et al.			
	5,376,252	12/27/1994	Ekstrom et al.			
	5,409,666	4/25/1995	Nagel et al.			
	5,411,858	5/2/1995	McGeehan et al.			
	5,429,807	7/4/1995	Matson et al.			
	5,440,332	8/8/1995	Good			
	5,445,934	8/29/1995	Fodor et al.			
	5,450,235	9/12/1995	Smith et al.			
	5,474,796	12/12/1995	Brennan			

FOREIGN PATENT DOCUMENTS

Name	Document Number	Date	Country	Class	Subclass	Translation Yes/No

OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)

EXAMINER: Initial if citation considered, whether or not citation is in conformance with MPEP 609;
Draw line through citation if not in conformance and not considered. Include copy of this form with next
communication to applicant.



Form PTO-1449 U.S. Department of Commerce
Patent and Trademark Office

November 21, 2000

Page 4 of 8

INFORMATION DISCLOSURE
STATEMENT BY APPLICANT

Atty. Docket No.

Serial No.

27987-228356

09/612,418

Applicant

RAYMOND P. JOHNSTON et al.

Filing Date

Group

July 7, 2000

1631

U.S. PATENT DOCUMENTS

Examiner Initial	Document Number	Date	Name	Class	Subclass	Filing Date If Appropriate
AM	5,498,392	3/12/1996	Wilding et al.			
	5,500,071	5/19/1996	Kaltenbach et al.			
	5,514,120	5/7/1996	Johnston et al.			
	5,529,676	6/25/1996	Maley et al.			
	5,571,410	11/5/1996	Swedberg et al.			
	5,585,186	12/17/1996	Scholz et al.			
	5,601,678	2/11/1997	Gerber et al.			
	5,602,202	2/11/1997	Groves			
	5,635,358	6/3/1997	Wilding et al.			
	5,637,469	6/10/1997	Wilding et al.			
	5,641,400	6/24/1997	Kaltenbach et al.			
	5,651,888	7/29/1997	Shimizu et al.			
	5,658,413	8/19/1997	Kaltenbach et al.			
	5,658,802	8/19/1997	Hayes et al.			
	5,691,846	11/25/1997	Benson, Jr. et al.			

FOREIGN PATENT DOCUMENTS

Name	Document Number	Date	Country	Class	Subclass	Translation Yes/No

OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)

EXAMINER: Initial if citation considered, whether or not citation is in conformance with MPEP 609;
Draw line through citation if not in conformance and not considered. Include copy of this form with next
communication to applicant.



November 21, 2000

Page 5 of 8

Form PTO-1449 U.S. Department of Commerce
Patent and Trademark Office

Atty. Docket No.

Serial No.

27987-228356

09/612,418

Applicant

RAYMOND P. JOHNSTON et al.

Filing Date

Group

July 7, 2000

1631

INFORMATION DISCLOSURE
STATEMENT BY APPLICANT

U.S. PATENT DOCUMENTS

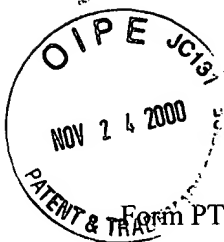
Examiner Initial	Document Number	Date	Name	Class	Subclass	Filing Date If Appropriate
AM	5,698,299	12/16/1997	Schmidt et al.			
	5,705,813	1/6/1998	Apffel et al.			
	5,707,799	1/13/1998	Hansmann et al.			
	5,716,778	2/10/1998	Weng et al.			
	5,716,825	2/10/1998	Hancock et al.			
	5,721,435	2/24/1998	Troll			
	5,726,026	3/10/1998	Wilding et al.			
	5,728,446	3/17/1998	Johnston et al.			
	5,737,457	4/7/1998	Saini et al.			
	5,750,015	5/12/1998	Soane et al.			
	5,755,942	5/26/1998	Zanzucchi et al.			
	5,757,482	5/26/1998	Fuchs et al.			
	5,842,787	12/1/1998	Kopf-Sill et al.			

FOREIGN PATENT DOCUMENTS

Name	Document Number	Date	Country	Class	Subclass	Translation Yes/No

OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)

EXAMINER: Initial if citation considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.



November 21, 2000

Page 6 of 8

Form PTO-1449 U.S. Department of Commerce
Patent and Trademark Office

Atty. Docket No.

Serial No.

27987-228356

09/612,418

Applicant

RAYMOND P. JOHNSTON et al.

Filing Date

Group

July 7, 2000

1631

INFORMATION DISCLOSURE
STATEMENT BY APPLICANT

U.S. PATENT DOCUMENTS

Examiner Initial	Document Number	Date	Name	Class	Subclass	Filing Date If Appropriate
AM ↓	5,885,470	3/23/1999	Parce et al.			
	5,922,615	7/13/1999	Nowakowski et al.			
	5,932,315	8/3/1999	Lum et al.			
	5,951,836	9/14/1999	McAleer et al.			
	5,952,173	9/14/1999	Hansmann et al.			
	5,958,782	9/28/1999	Bentsen et al.			

FOREIGN PATENT DOCUMENTS

Name	Document Number	Date	Country	Class	Subclass	Translation Yes/No
AM ↓	42 10 072 A1	25 Mar 93	Germany			Yes
	1 338 579	28 Nov 73	Great Britain			Yes
	1 354 502	30 May 74	Great Britain			Yes
	WO 91/12949	5 Sep 91				Yes
	WO 92/07899	14 May 92				Yes
	WO 93/111727	24 Jun 93				Yes
	WO 96/04547	15 Feb 96				Yes
	WO 96/09879	4 Apr 96				Yes

OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)

AM	Article: "Fabrication of Novel Three-Dimensional Microstructures by the Anisotropic Etching of (100) and (110) Silicon", Ernest Bassous, <u>IEEE Transactions on Electron Devices</u> , Vol. ED-25, No. 10, October 1978
AM	Article: "Microtechnology Opens Doors to the Universe of Small Space", Peter Zuska <u>Medical Device & Diagnostic Industry</u> , January 1997.

EXAMINER: Initial if citation considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.



Form PTO-1449 U.S. Department of Commerce
Patent and Trademark Office

November 21, 2000

Page 7 of 8

INFORMATION DISCLOSURE
STATEMENT BY APPLICANT

Atty. Docket No.

Serial No.

27987-228356

09/612,418

Applicant

RAYMOND P. JOHNSTON et al.

Filing Date

Group

July 7, 2000

1631

U.S. PATENT DOCUMENTS

Examiner Initial	Document Number	Date	Name	Class	Subclass	Filing Date If Appropriate

FOREIGN PATENT DOCUMENTS

Name	Document Number	Date	Country	Class	Subclass	Translation Yes/No
AM	WO 96/10747	11 Apr 96				
	WO 97/02357	23 Jan 97				
	WO 97/13633	17 Apr 97				
	WO 98/00231	8 Jan 98				
	WO 98/21626	22 May 98				
	WO 98/24544	11 Jun 98				
	WO 98/46438	22 Oct 98				
	WO 99/06589	11 Feb 99				
	WO 99/19717	22 Apr 99				

OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)

AM	Article: "Simple and Low Cost Fabrication of Embedded Micro-Channels by Using a New Thick-Film Photoplastic" Guerin, et al. <u>Digest of Technical Papers</u> , Vol 2, June 1997.
AM	Article: "Fabrication of Microstructures with high aspect ratios and great structural heights by synchrotron radiation lithography, galvanofarming, and plastic moulding (LIGA process)" Becker, et al. <u>MiMicroelectronic Engineering</u> 4 (1986)

EXAMINER: Initial if citation considered, whether or not citation is in conformance with MPEP 609;
Draw line through citation if not in conformance and not considered. Include copy of this form with next
communication to applicant.



Form PTO-1449 U.S. Department of Commerce
Patent and Trademark Office

November 21, 2000

Page 8 of 8

INFORMATION DISCLOSURE
STATEMENT BY APPLICANT

Atty. Docket No.

Serial No.

27987-228356

09/612,418

Applicant

RAYMOND P. JOHNSTON et al.

Filing Date

Group

July 7, 2000

1631

U.S. PATENT DOCUMENTS

Examiner Initial	Document Number	Date	Name	Class	Subclass	Filing Date If Appropriate

FOREIGN PATENT DOCUMENTS

Name	Document Number	Date	Country	Class	Subclass	Translation Yes/No

OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)

AM		Article: "For lab chips, the future is plastic". IVD Technology Magazine, May 1997
AM		Article: "Microchannel Electrophoretic Separations of DNA in Injection-Molded Plastic Substrates" McCormick et al. <u>Analytical Chemistry</u> , Vol. 69, No. 14, July 1997.
		Article: "Processing of Three-Dimensional Microstructures Using Macroporous n-Type Silicon" Ottow et al. <u>J. Electrochem. Soc.</u> , Vol. 143, No. 1, January 1996.
		Article: "UV Laser Machined Plymer Substrates for the Development of Microdignostic Systems" Roberts, et al. <u>Analytical Chemistry</u> , Vol. 69, No. 11, June 1997.

EXAMINER: Initial if citation considered, whether or not citation is in conformance with MPEP 609;
Draw line through citation if not in conformance and not considered. Include copy of this form with next
communication to applicant.

